

remained until shaken off by the rapid vibrations of the wires or was blown off the trees by the wind. The layer of fog was shallow, often only 40 or 50 feet thick. On the streets visibility was restricted to 50 yards while, from the observation platform on the roof, Mt. McKinley, 160 miles away, often was visible. Ice in the river averaged 43 inches thick on the 31st of January. It is interesting to note that Admiral Byrd, in his book "Little America" mentions but 2 months with mean temperatures lower than the January mean at Fairbanks.

February began with mild weather and a low barometer. The maximum temperature of 28° occurred on the 8th and the minimum -49° on the 23d. A great high-pressure area extended over the interior of Alaska late in the month. On the 27th the barometer reached 31.09 inches and remained above 31 inches for 26 hours. The minimum temperature at this time was -45° and the maximum -22°. On 12 days the maximum was zero or lower and on 20 days the minimum was below zero. The average temperature for the coldest 7-day period was -18°. The mean for the month was -6.8° which is 6.9° below normal. Ice in the river averaged 53 inches in thickness at the close of the month.

The cold wave which began on February 18 continued over into March. The minimum temperature for the month, -35°, occurred on the 1st. The mean for the month, 8.3°, is 2° below normal. On the 14th the temperature rose above 32° for the first time since October 23. The barometer fell to 28.97 inches on the 15th and the temperature went up to 45°. Six days previous the barometer registered 30.8 inches. When the storm center arrived the temperature rose from -15° on the 14th to 45° on the 15th. Ice in the river averaged 56.5 inches in thickness on the 13th of March, which is the greatest thickness ever recorded at this station. The mean temperatures for the past 5 months had now been -8.7 and for the past 6 months, -2.4°.

The minimum temperature for April was -5° and the mean 32.1°. The hours of sunlight on the 1st amounted to 13.6 and on the 30th to 16.9. The snow now slid off the house tops and that on the ground began melting. The top layer of soil began thawing and pools of icy water covered the land. The last dogsled was seen on

the streets April 19 and this was also the date the first airplane had the skii landing gear removed and began operating on wheels. Winter was over. Late in April the mosquitoes began to appear. Migratory birds were first observed on May 3. Pussy willows appeared and a few crocus and other flowers were observed May 1. The ice broke up in the Tanana River on May 8. Buds on the deciduous trees began opening May 22, and the last heavy frost of spring occurred on June 9.

Record of daily minimum temperatures during the 5 winter months of 1932-33

Number of days	32° or lower	20° or lower	10° or lower	0° or lower	-10° or lower	-20° or lower	-30° or lower	-40° or lower	-50° or lower	-60°
November.....	30	30	30	30	23	12	2	—	—	—
December.....	31	31	30	30	22	14	12	4	—	—
January.....	31	30	28	28	26	24	20	15	3	1
February.....	28	27	27	21	15	13	11	6	—	—
March.....	31	29	26	20	14	7	2	—	—	—
Total days.....	151	147	141	129	100	70	47	25	3	1

Comparative monthly temperatures for Alaska and for selected stations in Canada and northern United States during the winter of 1932-33

	November			December			January			February			March			5 months
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Maximum	Minimum	Mean	
Greenville, Maine.....	54	-3	34.9	51	-10	23.6	42	-9	22.1	44	-11	19.5	46	-6	22.4	24.6
Boston.....	66	8	42.8	66	0	38.1	60	9	37.8	66	9	33.7	60	11	35.7	37.6
Albany, N.Y.....	58	9	37.8	63	-7	31.8	56	5	34.6	57	3	29.1	57	8	33.0	33.3
Washington.....	68	18	44.7	68	14	39.6	68	20	42.6	68	14	38.4	74	20	43.0	41.7
Chicago.....	63	17	37.2	58	-4	28.8	57	16	36.7	56	-19	26.2	69	6	35.4	32.9
Duluth.....	62	-10	25.7	45	-23	12.0	42	-15	17.6	39	-33	6.8	44	-13	24.0	17.2
Devils Lake.....	51	-10	23.6	48	-20	11.0	39	-13	9.5	44	-35	5.8	60	-8	25.8	15.1
Havre.....	80	-10	31.6	64	-30	19.8	53	-21	21.6	59	-32	16.0	68	-16	35.0	24.8
Miles City.....	60	-3	34.5	66	-26	17.0	67	-23	20.4	48	-35	15.3	70	6	37.1	24.9
Yellowstone Park.....	53	4	32.2	43	-29	11.9	37	-7	19.2	37	-40	10.2	51	0	28.4	20.4
Grand Junction.....	61	15	39.3	51	0	22.9	44	-6	20.2	55	-21	16.5	74	22	43.9	28.3
Spokane.....	58	26	42.0	54	1	26.9	48	11	31.8	46	-17	23.3	57	23	40.2	32.8
Doucet, Quebec.....	44	-35	17.5	41	-48	8.2	36	-44	7.0	35	-52	2.9	45	-36	12.8	9.7
Cochran, Ontario.....	46	-12	20.8	47	-27	11.0	34	-29	6.2	34	-33	5.7	42	-16	15.4	11.8
Le Pas, Manitoba.....	50	-25	11.0	33	-32	-3.5	36	-38	-7.6	36	-40	-6.3	52	-28	11.6	1.0
Prince Albert.....	51	-12	15.9	38	-31	2.2	38	-38	-4.0	43	-40	-1.7	44	-33	15.7	5.6
Saskatchewan.....	46	-20	18.5	39	-34	2.7	33	-31	2.3	39	-42	-1.9	48	-19	17.1	7.7
Winnipeg.....	43	11	31.8	40	9	27.1	45	7	24.0	42	13	28.6	49	9	32.6	28.8
Juneau.....	35	-13	6.0	39	-22	13.2	28	-36	-6.7	39	-28	2.6	28	-22	7.2	4.5
Nome.....	19	-30	-8.2	27	-47	-13.1	17	-60	-23.5	28	-49	-6.8	45	-35	8.3	-8.7
Fairbanks.....	19	-30	-8.2	27	-47	-13.1	17	-60	-23.5	28	-49	-6.8	45	-35	8.3	-8.7

TWO GOOD BOOKS ON METEOROLOGY

- (1) *The Drama of the Weather*, by Sir Napier Shaw, Cambridge University Press, 1933.
 - (2) *A Short Course in Elementary Meteorology*, Fourth edition (completely revised), by W. H. Pick, London: His Majesty's Stationery Office, 1933.
- (1) Naturally the publishers of Sir Napier Shaw's great 4-volume Manual of Meteorology, written for the High Priests, were insistent that he produce something inspiring for the layman. That is why "The Drama of the Weather" came to be written, a finely printed, beautifully illustrated book cram-full of information with here and there a touch of delightful humor. And with all its world of facts there is in this book neither *sin* nor *cosin* from cover to cover, nor any other mathematical symbol or function whatsoever. What a delight it is to the novice, and yet a store of knowledge on which even the longest initiated can draw with pleasure and profit.

(2) The second of these books is an old and honored friend from the Meteorological Office, London, grown a bit more portly from attending every new banquet worth while. On this fourth visit he tells us all he did before, concisely and accurately, and adds something besides, especially in regard to map construction and forecasting. One can see, too, that here he wisely follows the biblical injunction: "Prove all things: hold fast that which is good."

Nor does this friend, either, puzzle us with mathematical equations, save a few of the simplest that he just has to use when talking about the upper air—that is another reason, in addition to reliability, why he is welcome everywhere.—W. J. H.